

What is claimed is:

1. A method of manufacturing an optical head having a near-field light
generating element that condenses a luminous flux on an exit surface, comprising:
fixing the near-field light generating element, having a film formed on the exit
5 surface, to a holding member to form an optical head; and
forming an opening in the film by use of light emitted from at least one of a first
light source and a second light source, the second light source disposed in a position
conjugate with the first light source.
2. The method of claim 1, wherein the film is a reflecting film or a light
10 intercepting film.
3. The method of claim 1, wherein the first light source and the second light
source have the same focusing point.
4. The method of claim 1, wherein light emitted from the second light
source has a shorter wavelength than light emitted from the first light source.
- 15 5. The method of claim 4, wherein the opening is formed by vaporizing the
film using energy generated at the point of the condensed luminous flux.
6. The method of claim 1, wherein the generating element is a solid
immersion mirror or a solid immersion lens.
7. The method of claim 6, wherein the solid immersion mirror comprises:
20 a first surface of the mirror; and
a second surface of the mirror, a first portion of the film being provided on a

central part of the first surface and a second portion of the film being provided on substantially an entire area of the second surface.

8. The method of claim 7, wherein the first surface is concave and the second surface is paraboloid of revolution.

5 9. The method of claim 7, wherein the first surface is planar and the second surface is a paraboloid of revolution.

10. The method of claim 7, wherein the first surface is convex and the second surface is a paraboloid of revolution.

10 11. The method of claim 6, wherein the solid immersion mirror comprises:
a first surface which is plane surface;
a second surface which is a diverging surface having a first and second part into which a paraboloid is cut along an optical axis;
a third surface which is a condensing surface having a third and fourth part into which a paraboloid is cut along an optical axis; and
15 a fourth surface which is a plane surface and includes a focal point of the third surface.

12. The method of claim 11, further comprising:
providing the film on substantially an entire surface of the second, third and fourth surfaces;
20 emitting the light incident on the first surface; and
reflecting the light on the second surface and the third surface, and imaging the

light on a central part of the fourth surface.

13. The method of claim 6, wherein the solid immersion mirror comprises:

a first surface which is a plane surface;

5 a second surface which is a condensing surface having two parts into which a
paraboloid of revolution is cut along an optical axis; and

a third surface which is a plane surface including a focal point of the second
surface.

14. The method of claim 13, further comprising:

10 providing the film substantially on an entire surface area of the second a third
surfaces;

emitting the light incident on the first surface; and

reflecting the light on the second surface, and imaging the light on a central part
of the third surface.

15. The method of claim 7, further comprising:

15 emitting the light incident on a first surface of the solid immersion mirror; and
reflecting the light on a second surface of the solid immersion mirror at a central
portion of the first surface to be imaged on a central portion of the second surface at the
opening.

20 16. A method of forming an opening using a near-field light generating
element, comprising:

forming a super-resolution film on an exit surface of the element and a reflective

film on the super-resolution film; and

forming an opening in the reflective film by use of a beam emitted from at least one of a first light source and a second light source,

the second light source disposed in a position conjugate with the first light source.

5 17. The method of claim 16, wherein the super-resolution film is a thin film having a diameter of the beam exiting from the super-resolution film smaller than the diameter of the beam incident of the super-resolution film.

18. The method of claim 17, wherein the element is a solid immersion mirror or a solid immersion lens.

10 19. A method of forming an opening using a near-field light generating element, comprising:

forming a high heat-absorbing film on an exit surface of the element and a reflective film on the high heat-absorbing film; and

15 forming an opening in the reflective film by use of a beam emitted from at least one of a first light source and a second light source,

the second light source disposed in a position conjugate with the first light source.